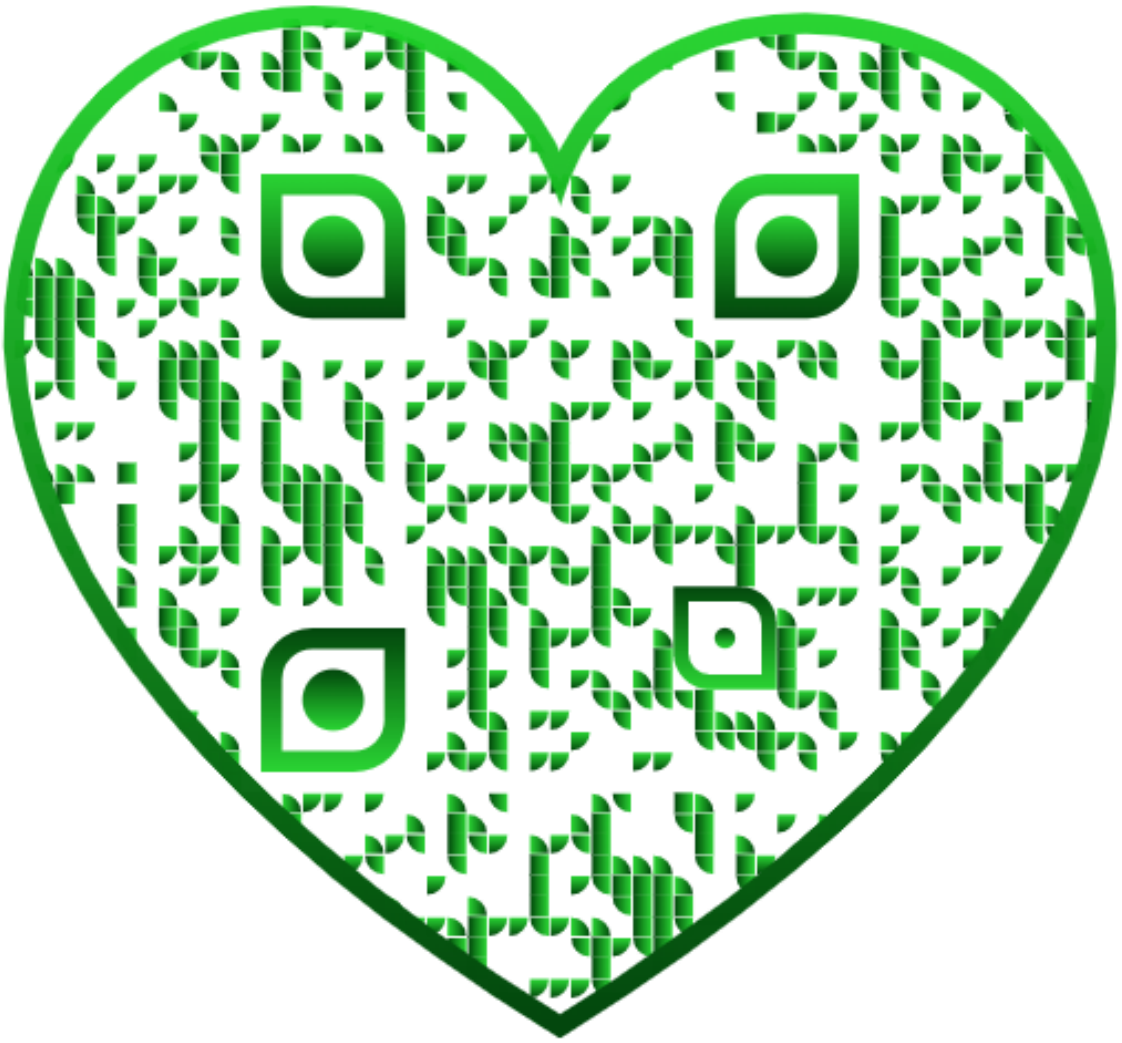
URTICARIA



URTICARIA: THE BASICS

- Urticaria (hives) is a vascular reaction of the skin characterized by wheals surrounded by a red halo or flare (area of erythema)
- Cardinal symptom is PRURITUS (itch)
- Urticaria is caused by swelling of the upper dermis
- Up to 20% of the population experience urticaria at some point in their lives

•Wheals:
Sudden transient swelling of the surface of the skin into red- or skin-colored welts

ANGIOEDEMA: THE BASICS

- Angioedema can be caused by the same pathogenic mechanisms as urticaria, but the pathology is in the deep dermis and subcutaneous tissue and swelling is the major manifestation
- Angioedema commonly affects the face or a portion of an extremity
  - Involvement of the lips, cheeks, and periorbital areas is common, but angioedema also may affect the tongue, pharynx, larynx and bowels
- May be painful or burning, but not pruritic
- May last several days

EXAMPLES OF URTICARIA

EXAMPLE OF ANGIOEDEMA

URTICARIA & ANGIOEDEMA

- Urticaria and angioedema may occur in any location together or individually.
- Angioedema and/or urticaria may be the cutaneous presentation of anaphylaxis, so assessment of the respiratory and cardiovascular systems is vital!

Table 1 – Classification of urticaria

	Acute	Chronic
Time course	< 6 wk	> 6 wk
Causes	Immunological reactions to medications, foods, contact allergens, and insect venoms; viral infections; idiopathic	Idiopathic; autoimmune; drug-induced; complement-mediated, secondary to a systemic disorder; rarely, caused by foods or other environmental triggers
Natural history	Typically self-limited	Chronic, with episodic exacerbations
Treatment	Symptom control with antihistamines	Symptom control with antihistamines; for severe refractory urticaria, consider addition of second-line treatment (eg, leukotriene modifiers, hydroxychloroquine, cyclosporine[5])

URTICARIA: CLINICAL FINDINGS

- Lesions typically appear over the course of minutes, enlarge, and then disappear within hours
- Individual wheals rarely last >12hrs
- Surrounding erythema will blanch with pressure
- Urticaria may be acute or chronic
  - **Acute** = new onset urticaria < 6 weeks
  - **Chronic** = recurrent urticaria (most days) > 6 weeks
- Most urticaria is acute and resolves

COMMON CAUSES OF ACUTE URTICARIA

- Idiopathic
- Infection
  - Upper respiratory, streptococcal infections, helminthes
- Food reactions
  - Shellfish, nuts, fruit, etc.
- Drug reactions
- IV administration
  - Blood products, contrast agents

ALLERGIC TRIGGERS

- **Acute Urticaria**
  - Drugs - β-lactam antibiotics, sulfonamides, aspirin
  - Foods - milk, eggs, peanuts, sesame, soy wheat, shellfish, fish
  - Food additives
  - Infections
  - Insect bites and stings
  - Contactants and inhalants (includes animal dander and latex)

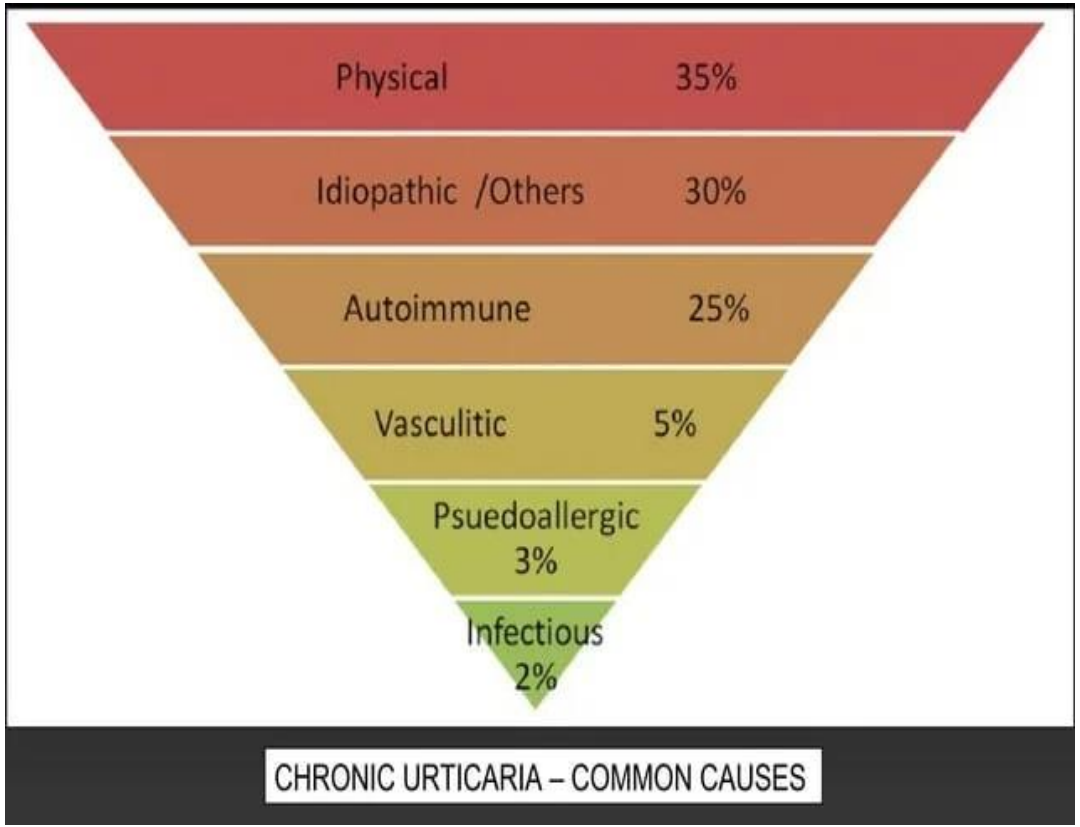
Chronic Urticaria

Physical factors
- –cold
- –heat
- –dermatographic
- –pressure
- –solar

Idiopathic

ETIOLOGY OF CHRONIC URTICARIA

- Idiopathic: over 50% of chronic urticaria
- Physical urticarias: many patients with chronic urticaria have physical factors that contribute to their urticaria
  - These factors include pressure, cold, heat, water (aquagenic), sunlight (solar), vibration, and exercise
  - Cholinergic urticaria is triggered by heat and emotion
  - The diagnosis of pure physical urticaria is made when the sole cause of a patient's urticaria is a physical factor
- Chronic autoimmune: possibly a third or more of patients with chronic urticaria
- Other: infections, ingestions, medications


Physical 35%
Idiopathic /Others 30%
Autoimmune 25%
Vasculitic 5%
Psuedoallergic 3%
Infectious 2%
CHRONIC URTICARIA – COMMON CAUSES

DERMATOGRAPHISM

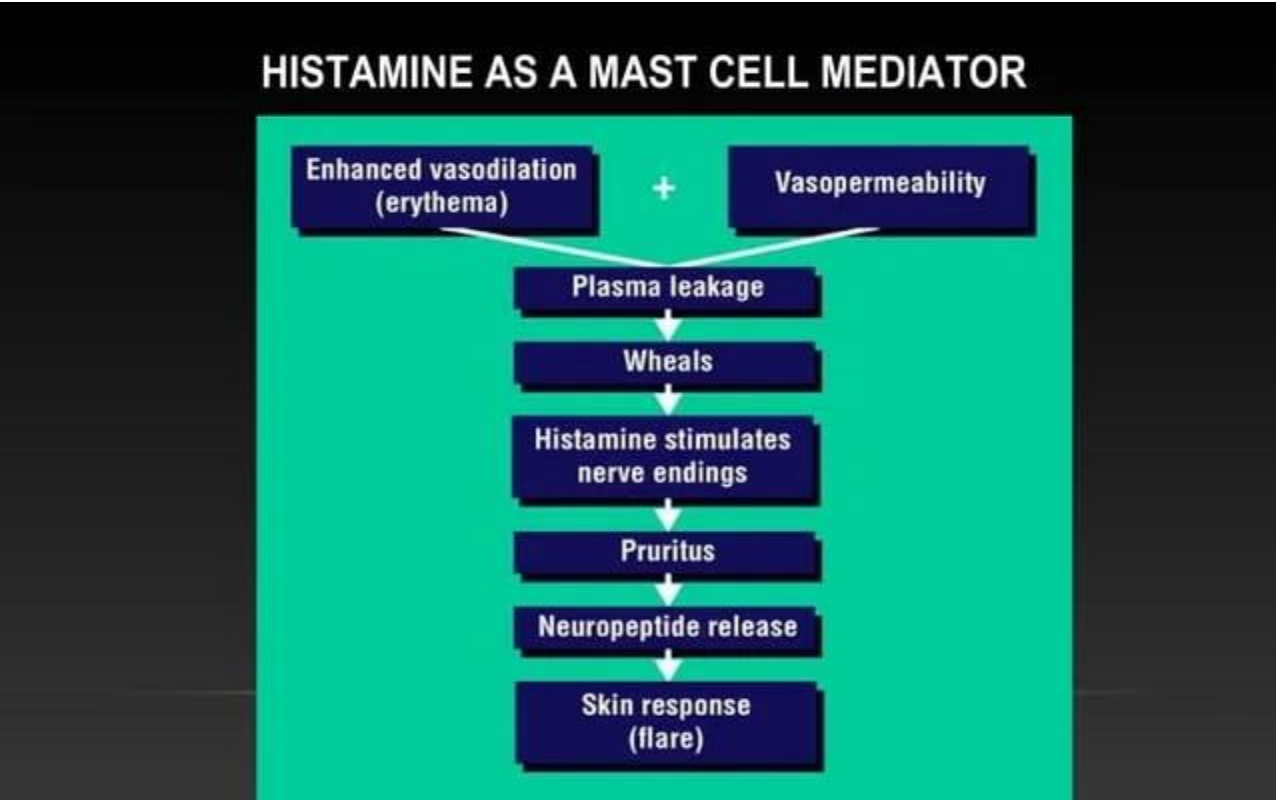
- Most common form of physical urticaria
- Sharply localized edema or wheal within seconds to minutes after the skin has been rubbed
- Affects 2-5% of the population

URTICARIA: PATHOPHYSIOLOGY

- The mast cell is the major effector cell in urticaria
- Immunologic Urticaria: antigen binds to IgE on the mast cell surface causing degranulation, which results in release of histamine
  - Histamine binds to H1 and H2 receptors to cause arteriolar dilatation, venous constriction and increased capillary permeability.

URTICARIA: PATHOPHYSIOLOGY

- Non-Immunologic Urticaria: not dependent on the binding of IgE receptors
  - For example, aspirin may induce histamine release through a pharmacologic mechanism where its effect on arachidonic acid metabolism causes a release of histamine from mast cells.
  - Physical stimuli may induce histamine release through direct mast cell degranulation


HISTAMINE AS A MAST CELL MEDIATOR
Enhanced vasodilation (erythema)
+
Vasopermeability
Plasma leakage
Wheals
Histamine stimulates nerve endings
Pruritus
Neuropeptide release
Skin response (flare)

CLINICAL EVALUATION

- Ask about symptoms of anaphylaxis, including: chest tightness or difficulty breathing, hoarse voice or throat tightness, nausea, vomiting, abdominal pain, lightheadedness
- In addition to the skin exam, the physician should obtain a set of vital signs and evaluate for respiratory distress (dyspnea, wheeze, bronchospasm, stridor) and hypotension
- For acute urticaria, no lab testing is required
  - Laboratory testing is generally driven by associated signs and symptoms (e.g. C1 esterase deficiency only causes angioedema, not hives)

Table 2 Assessment of disease activity in urticaria patients

Score	Wheals	Pruritus
0	None	None
1	Mild (<20 wheals/24 h)	Mild (present but not annoying or troublesome)
2	Moderate (20–50 wheals/24 h)	Moderate (troublesome but does not interfere with normal daily activity or sleep)
3	Intense (>50 wheals/24 h or large confluent areas of wheals)	Intense (severe pruritus, which is sufficiently troublesome to interfere with normal daily activity or sleep)

Sum of score: 0–6

- Pt should be admitted

ALLERGY TESTING

- Allergy testing is not routinely performed in patients with chronic urticaria.
  - Skin prick testing may reveal sensitivities to a variety of allergens that may not be relevant to the patient's urticaria.
  - Laboratory tests may identify the 1/3 of patients with chronic urticaria who have an autoimmune pathogenesis. This adds additional costs and may not change the management.

NATURAL HISTORY AND PROGNOSIS

- Symptoms of chronic urticaria can be severe and impair the patient's quality of life (QOL)
- In most patients, chronic urticaria is an episodic and self-limited disorder
- Average duration of disease is two to five years
- In patients with idiopathic chronic urticaria, there is a rate of spontaneous remission at one year of approximately 30 to 50 percent
- However, symptoms extend beyond five years in nearly one-fifth of patients

TREATMENT: ANTIHISTAMINES

- Oral H1 antihistamines are the first-line treatment for acute and chronic urticaria
- 1st-generation H1 antihistamines are less well-tolerated due to sedation
  - e.g. 10-50 mg hydroxyzine 1-2 hours before bedtime
  - Can start with smaller doses (10 mg) to allow the patient to manage the sedation effects
  - Remember to warn patient not to drive a car or operate other dangerous machines within 4-6 hours of taking this medication
  - Do not take with other sedating medications

TREATMENT: ANTIHISTAMINES

- 2nd-generation H1 antihistamines (e.g. Loratadine) are better tolerated with fewer sedative and anticholinergic effects and may be used in patients intolerant of or inadequately controlled by 1st-generation agents
- Certain populations, including children, the elderly, and patients with renal or hepatic impairment may require dosage adjustments when using H1 antihistamines
- Also used with caution in patients with glaucoma, prostatic hyperplasia, and respiratory disease

- Aselastine: 2nd generation anti histamine used only for idiopathic urticaria
- Stopping the use steroids should be gradually for 10 days

ANTIHISTAMINES

- The following are examples of H_1 antihistamines:
  - 1st Generation
    - Diphenhydramine (OTC)
    - Hydroxyzine (Rx, generic)
    - Chlorpheniramine (OTC)
  - 2nd Generation
    - Cetirizine (OTC)
    - Loratadine (OTC)
    - Fexofenadine (OTC

: contraindicated with anti hypertension drugs like flunarizine because it causes prolonged Q_T interval leading to arrhythmia

•Most important side effect of anti histamine is xerostomia

BEYOND ORDINARY URTICARIA

- The appearance of the hives does not tell you the underlying cause
- The presence of systemic symptoms should signal the possibility that an urticarial rash is not ordinary urticaria but rather a systemic syndrome with urticaria-like skin lesions

SYNOPSIS

- Urticaria (hives) is a vascular reaction of the skin characterized by wheals surrounded by a red halo or flare.
- Urticaria is classified as acute or chronic. Acute urticaria is defined as periodic outbreaks of urticarial lesions that resolve within six weeks.
- Over 50% of chronic urticaria is idiopathic.
- Oral H1 antihistamines are first-line treatment for acute and chronic urticaria.
- 1st generation H1 antihistamines can cause sedation.
- The presence of systemic symptoms should signal the possibility that an urticarial rash is not ordinary urtica

ANAPHYLAXIS

- Anaphylaxis is a serious allergic reaction that is rapid in onset and may cause death
- Patients with anaphylaxis may have no skin lesions, lesions of angioedema, and/or typical urticarial wheals
- Morphology of the skin lesion does not matter
  - Patients with angioedema are not more likely to have anaphylaxis compared to patients with urticaria
- ABC's first!
- Recruit more help. May need to triage to higher level of care (in clinic this means calling 911).

ANAPHYLAXIS: TREATMENT

- First-line therapy for anaphylaxis includes epinephrine, IV fluids and oxygen
- Administer 0.3-0.5ml in 1:1000 epinephrine dilution IM repeating every 10-20min as necessary
- Make sure airway is patent or else intubation may be emergently necessary
- Patients who have severe reactions requiring epinephrine should be monitored in the hospital